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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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EXAMINER
MANNAVA, A

ART UNIT	PAPER NUMBER
2736	9

DATE MAILED: 10/16/98

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

See Attached

Office Action Summary

Application No.
08/935,336

Applicant(s)
Schofield et al.

Examiner
Ashok Mannava

Group Art Unit
2736



☒ Responsive to communication(s) filed on Jul 31, 1998

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 50-114 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☒ Claim(s) 69-101 is/are allowed.

☒ Claim(s) 50-68 and 102-114 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

2. Claims 50, 51, 102 and 103 are rejected under 35 U.S.C. 102(e) as being anticipated by Rosinski et al.

Regarding claims 50, 102 and 103, Rosinski et al. discloses cameras and a display.

Rosinski et al. discloses graphics for disclosing distances in the display. (see Rosinski et al. column 5, lines 54-57, column 7, lines 39-42).

Regarding claim 51, Rosinski et al. discloses a graphic overlay concerning distance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 52-59 and 104-110 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rosinski et al. as applied to claims 50 and 103 further in view of Saneyoshi et al. (5,410,346).

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Regarding claims 52 and 104, Rosinski et al. does not specifically disclose graphic overlays comprised of horizontal marks. However, Saneyoshi et al. discloses horizontal marks in figure (18) at regular intervals which help define the curvature of the road. Furthermore, it would have been obvious to one of ordinary skill in the art to use horizontal marks in Rosinski et al., so the driver can determine if a vehicle in the surrounding area is staying within the lanes on a curved road.

Regarding claims 53, 105 and 106, Saneyoshi et al. discloses the marks are adjusted in response to vehicle speed and marks are placed at regular spacial intervals. (see column 16, line 7).

Regarding claim 54, Saneyoshi et al. discloses marks placed at regular intervals. Saneyoshi et al. does not disclose the intervals are rearward. However, it is highly conventional to detect and display objects rear of the vehicle as disclosed by Rosinski et al. Furthermore, it would have been obvious to one of ordinary skill in the art to adapt the device of Saneyoshi et al. to display objects to the rear of the vehicle since rear-end collisions are a common hazard.

Regarding claims 55 and 107, Saneyoshi et al. discloses lines which are lane boundaries.

Regarding claim 56 and 108, Saneyoshi et al. discloses in figure 18 that the horizontal lines move with the curvature of the road.

Regarding claims 57, 58, 109 and 110, Saneyoshi et al. discloses a steering angle sensor (4). (see column 16, line 8).

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Regarding claim 59, Saneyoshi et al. discloses including the lane boundaries based on the anticipated travel determined from the steering angle and the vehicle speed.

5. Claim 60 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rosinski et al. in view of Saneyoshi et al. as applied to claim 59 above, and further in view of Hseih (5,574,443).

Regarding claim 60, Saneyoshi et al. does not disclose disabling the graphic overlay when not in reverse gear. However, Rosinski et al. in view of Saneyoshi et al. discloses an improved object detection system and display, and Rosinski et al. discloses displaying objects detected from the rear. Thus, it would have been obvious to one of ordinary skill in the art to use the improved system for travel in any direction, including reverse, to prevent collisions. Hseih discloses activating the apparatus when the vehicle is backing up. (see abstract). Hseih does not specifically disclose determining that the vehicle is in reverse by the reverse gear. However, it would have been obvious to one of ordinary skill in the art to detect the gear position, because it is simple and quick. Furthermore, it would have been obvious to one of ordinary skill in the art to disable the system, when the vehicle is not in reverse so as not to distract the driver when driving forward.

6. Claims 61, 62, 64, 66, 111 and 112, are rejected under 35 U.S.C. 103(a) as being unpatentable over Rosinski et al. as applied to claims 50 and 102 above, and further in view of Nishimura et al. (4,713,685).

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Regarding claims 61 and 111, Rosinski et al. discloses the claimed cameras. Rosinski et al. does not disclose a substantially seamless panoramic display. Nishimura et al. discloses a substantially seamless display in figure 3(c) on one CRT. (see column 4, lines 31-54). Furthermore, it would have been obvious to one of ordinary skill in the art to use the side by side display of Nishimura et al. in Rosinski et al., so a display from two or more cameras can be done on a single CRT.

Regarding claims 62 and 112, Nishimura et al. discloses displaying images on a CRT display surface.

Regarding claim 64, Rosinski et al. discloses 3 cameras. Nishimura et al. discloses a substantially seamless display. Nishimura et al. does not disclose a display for three cameras. However, one of ordinary skill in the art would have readily recognized that the display of Nishimura et al. could easily have been modified for three cameras. Furthermore, it would have been obvious to one of ordinary skill in the art to use one display for three cameras in order to conserve space and costs.

Regarding claim 66, Nishimura et al. discloses a display for displaying both images.

7. Claims 63 and 67, are rejected under 35 U.S.C. 103(a) as being unpatentable over Rosinski et al. in view of Nishimura et al. as applied to claims 62 and 64 above, and further in view of Jewell et al. (5,325,386).

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Regarding claims 63 and 67, Rosinski et al. in view of Nishimura et al. does not disclose a CMOS imaging array. However, in column 4, lines 39-46, Jewell et al. teaches the use of a CMOS imaging device. Furthermore, it would have been obvious to one of ordinary skill in the art to use the CMOS device of Jewell et al. in Rosinski et al., because it has low power consumption.

8. Claims 68 and 114 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rosinski et al. as applied to claims 50 and 102 above, and further in view of Jewell et al.

Regarding claims 68 and 114, Rosinski et al. does not disclose a CMOS imaging array. However, in column 4, lines 39-46, Jewell et al. teaches the use of a CMOS imaging device. Furthermore, it would have been obvious to one of ordinary skill in the art to use the CMOS device of Jewell et al. in Rosinski et al., because it has low power consumption.

9. Claim 65 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rosinski et al. in view of Nishimura et al. as applied to claim 64 above, and further in view of Hsieh. (5,574,443).

Regarding claim 65, Rosinski et al. discloses the two side cameras at the same height, but does not disclose the third camera at the same height. However, Hsieh discloses 3 cameras at substantially the same height. Furthermore, it would have been obvious to one of ordinary skill in the art to locate the third camera at the rear on the rear spoiler at substantially the same height, because the spoiler is a convenient inconspicuous location.

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Allowable Subject Matter

10. Claims 69-114 are allowed.
11. The following is an examiner's statement of reasons for allowance: Regarding claim 85, the prior art does not disclose visually highlighting objects in the image when the objects are too close to the vehicle for a safe lane-change maneuver whereby the visual highlighting comprises modifying the displayed images which include the objects too close.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Nishitani, previously cited discloses modifying the displayed image. see column 5, lines 34-42.
13. Applicant's arguments with respect to claims 50-68 and 102-114 have been considered but are moot in view of the new ground(s) of rejection.
14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 308-9051, (for formal communications intended for entry)

Or:

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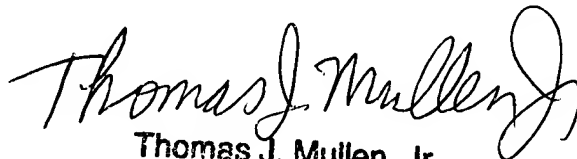
(703) 305-3988, for informal or draft communications, please label
"PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,
Arlington, VA., Sixth Floor (Receptionist).

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ashok Mannava whose telephone number is (703) 308-6796. The examiner can normally be reached on Mon-Thur, 8:30-5:30 and every other Friday, 9:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeff Hofsass, can be reached on (703) 305-4717. The fax phone number for this group is (703) 305-3988.

Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist whose telephone number is (703) 305-4700.


Thomas J. Mullen, Jr.
Primary Examiner
Art Unit 2736

AKM



October 13, 1998